RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number:	_/0/7/8,359
Source:	IFWO
Date Processed by STIC:	1/12/05
	• / /

ENTERED



IFWO

RAW SEQUENCE LISTINGPATENT APPLICATION: **US/10/718,359**DATE: 01/12/2005
TIME: 11:34:06

```
Input Set : A:\041116.US 275.00080101.ST25.txt
                Output Set: N:\CRF4\01122005\J718359.raw
 3 <110> APPLICANT: MEDICAL COLLEGE OF GEORGIA RESEARCH INSTITUTE, INC.
 5 <120> TITLE OF INVENTION: NaCT AS A TARGET FOR LIFESPAN EXPANSION AND WEIGHT REDUCTION
 7 <130> FILE REFERENCE: 275.0008 0101
 9 <140> CURRENT APPLICATION NUMBER: 10/718,359
10 <141> CURRENT FILING DATE: 2003-11-20
12 <150> PRIOR APPLICATION NUMBER: 60/428,469
13 <151> PRIOR FILING DATE: 2002-11-22
15 <150> PRIOR APPLICATION NUMBER: 60/459,441
16 <151> PRIOR FILING DATE: 2003-04-01
18 <160> NUMBER OF SEQ ID NOS: 31
20 <170> SOFTWARE: PatentIn version 3.2
22 <210> SEO ID NO: 1
23 <211> LENGTH: 2602
24 <212> TYPE: DNA
25 <213> ORGANISM: Drosophila melanogaster
27 <400> SEQUENCE: 1
28 ttcaccgttt ccgaatcgga cgaaccgggc gtgattgctc tcctgctgct ttcgagatcg
                                                                          60
30 gagtecegat aaggatataa etacaaceta aagaggaate caageeteet eetgeegeta
                                                                         120
32 gtttcgaaaa gtaaatagag tacttgttat caactgggaa gcggagatac atagctccga
                                                                         180
34 tatteetgtg aaageeagae aaaeggatae caaegaacaa tegeeatate tacaegeeae
                                                                         240
36 cgccactgga catcaaaatg gaaattgaaa ttggcgaaca accccagcct ccggtgaagt
                                                                         300
38 gctccaactt cttcgctaac cactggaagg gattggttgt gttcctggtg ccgctgctat
                                                                         360
                                                                         420
40 gtctgcctgt tatgctgcta aacgaaggcg ccgaatttcg gtgcatgtac ctccttttgg
42 taatggccat attttgggtt acggaagcct tgcctctcta tgtgacgtcc atgataccga
                                                                         480
                                                                         540
44 ttgtggcctt cccaataatg ggtataatga gctcggatca gacttgccgc ttgtacttca
46 aggatacget ggtgatgtte atgggeggea ttatggtege eetggetgtg gagtaetgta
                                                                         600
48 atctacacaa acgtcttgcc ttgagggtaa tccagatcgt gggctgcagt ccccgcagat
                                                                         660
50 tacactttgg cctcatcatg gttacaatgt ttttgagcat gtggatttcg aacgccgcct
                                                                         720
                                                                         780
52 gtactgccat gatgtgtccg attatccaag ccgtgctgga ggagctgcag gctcagggtg
54 totgcaaaat caaccatgag cotcaataco aaatogttgg aggcaacaag aaaaacaacg
                                                                         840
56 aggatgagec accatacece accaagatea etetgtgeta etatetggge attgeetaeg
                                                                         900
                                                                         960
58 cctcctcgct gggtggctgt ggaaccatca tcggaactgc caccaatctt accttcaagg
60 gcatctacga ggctcgtttc aagaactcca ccgaacagat ggacttcccc accttcatgt
                                                                        1020
62 tetacteggt gecatecatg ttggtetaca cettgetgae attegtgtte etgeaatgge
                                                                        1080
```

64 acttcatggg tctgtggcgt cccaagagca aggaggcaca ggaagtccag aggggacgag

66 agggcgccga tgtcgccaaa aaggttatcg atcagcgcta caaggatctg ggtcccatgt

68 ccattcacga gatccaagtg atgattctgt tcatttttat ggttgtgatg tacttcaccc

70 gcaagcccgg catctttttg ggatgggccg atttgctgaa ttccaaggac attcgtaact

72 ctatgcccac tatttttgtc gtcgtcatgt gcttcatgct gcccgccaat tatgctttcc

74 tacgctactg caccagacgc ggtggtccag tgcccacggg tcccactcca tcgctgatca

76 cctggaagtt catccagacc aaggtgccat ggggtctggt gttcctgctt ggcggtggct 78 tcgctttggc cgaaggcagc aagcagagcg gcatggccaa gctgattggc aatgctctga

80 ttggattgaa ggttctgccc aactctgtcc tcttactggt ggtcatcctg gtggctgtgt

1140

1200

1260

1320

1380 1440

1500

1560

1620

RAW SEQUENCE LISTINGPATENT APPLICATION: **US/10/718,359**DATE: 01/12/2005 TIME: 11:34:06

Input Set : A:\041116.US 275.00080101.ST25.txt
Output Set: N:\CRF4\01122005\J718359.raw

```
82 teetgacege etteagetee aatgtggega ttgeeaacat tattatteee gttetggeeg
                                                                        1680
84 agatgtccct ggccattgag atccatcctc tgtacctgat cctgcccgct ggcttggcct
                                                                        1740
86 gcagtatggc cttccacctg ccggttagta ctccgcccaa cgctttggtt gctggctatg
                                                                        1800
88 ccaacattag gacgaaggac atggccattg ctggaatcgg tccgaccatc attaccatca
                                                                        1860
90 teaccetgtt tgttttetge caaacetggg geetggtegt etateegaae ettaaetegt
                                                                        1920
92 teceegaatg ggeteagatt tatgeegegg eageactggg aaacaagaeg eactagatag
                                                                        1980
94 ttagtaatta gtgtaaataa ctaacatacc cgtcacagcg ataaagttga ggaaaattta
                                                                        2040
96 gggaatttta aacgaaaagt gcctttgctg acagcgaaaa atgtgaaaaa tatttaacta
                                                                        2100
98 tgtatacttg catttcagag ttgcgaaaag ttttgataca aaagcattac ctactgttta
                                                                        2160
100 gaaaaatgtg ttaaaaaaaa aacgtatcgc aatatactgt taatcaggaa ttgaacacct
                                                                         2220
102 ggtctacqca ctcaqctaaa tatttaaata caaattaatg ttacttaatt gttgcattta
                                                                         2280
104 gcataaaaat ggaaaagatt tggaaaagtt agaacagttt gttcaatggc agccctggcc
                                                                         2340
106 tgctaatatt ttaaataact agactgagag aacttacata ttcatacatg tttttcaact
                                                                         2400
108 tgtaaaaatt tttaaatgaa caactcactc aatacttcat tgcgaaccaa aatgaacaca
                                                                         2460
110 caaatagegg taggetaage ttaaatgata etgtgtacat ttteagatga tttatgtttt
                                                                         2520
112 atatagtttg taaaaaatat taaataataa aaagctcaac cgccaataaa aaaaaaaaa
                                                                         2580
114 aaaaaaaaaa aaaaaaaaa aa
                                                                         2602
117 <210> SEQ ID NO: 2
118 <211> LENGTH: 572
119 <212> TYPE: PRT
120 <213> ORGANISM: Drosophila melanogaster
122 <400> SEQUENCE: 2
124 Met Glu Ile Glu Ile Gly Glu Gln Pro Gln Pro Pro Val Lys Cys Ser
125 1
128 Asn Phe Phe Ala Asn His Trp Lys Gly Leu Val Val Phe Leu Val Pro
                                    25
132 Leu Leu Cys Leu Pro Val Met Leu Leu Asn Glu Gly Ala Glu Phe Arg
            35
                                40
136 Cys Met Tyr Leu Leu Leu Val Met Ala Ile Phe Trp Val Thr Glu Ala
                            55
140 Leu Pro Leu Tyr Val Thr Ser Met Ile Pro Ile Val Ala Phe Pro Ile
141 65
                        70
                                            75
144 Met Gly Ile Met Ser Ser Asp Gln Thr Cys Arq Leu Tyr Phe Lys Asp
                                        90
148 Thr Leu Val Met Phe Met Gly Gly Ile Met Val Ala Leu Ala Val Glu
149
                                    105
                100
152 Tyr Cys Asn Leu His Lys Arg Leu Ala Leu Arg Val Ile Gln Ile Val
153
            115
                                120
                                                    125
156 Gly Cys Ser Pro Arg Arg Leu His Phe Gly Leu Ile Met Val Thr Met
        130
                            135
                                                 140
160 Phe Leu Ser Met Trp Ile Ser Asn Ala Ala Cys Thr Ala Met Met Cys
                        150
                                            155
164 Pro Ile Ile Gln Ala Val Leu Glu Glu Leu Gln Ala Gln Gly Val Cys
                    165
                                        170
168 Lys Ile Asn His Glu Pro Gln Tyr Gln Ile Val Gly Gly Asn Lys Lys
169
                                    185
                180
172 Asn Asn Glu Asp Glu Pro Pro Tyr Pro Thr Lys Ile Thr Leu Cys Tyr
                                200
176 Tyr Leu Gly Ile Ala Tyr Ala Ser Ser Leu Gly Gly Cys Gly Thr Ile
```

RAW SEQUENCE LISTING DATE: 01/12/2005
PATENT APPLICATION: US/10/718,359 TIME: 11:34:06

Input Set : A:\041116.US 275.00080101.ST25.txt
Output Set: N:\CRF4\01122005\J718359.raw

177		210					215					220				
			ጥኮሎ	7.1.	Thr	λοη		Th~	Dho	T	C1		т	C1	717	Arg
	225	Сту	1111	та	TIIT	230	пеп	TIIL	File	гÃ2		TTE	ıyı	GIU	Ата	
		T	7 cn	C ~ ~	mb ~		C1-	Mat	7	Dh.a	235	mh	Db =	M-L	Db -	240
	rne	гуѕ	ASII	ser		GIU	GIN	Met	Asp		Pro	Thr	Pne	мет		Tyr
185	_		_	_	245	_		_		250	_				255	_
	Ser	Val	Pro		Met	Leu	Val	Tyr		Leu	Leu	Thr	Phe		Phe	Leu
189				260					265					270		
	Gln	Trp		Phe	Met	Gly	Leu	Trp	Arg	Pro	Lys	Ser	Lys	Glu	Ala	Gln
193			275					280					285			
196	Glu		Gln	Arg	Gly	Arg		Gly	Ala	Asp	Val	Ala	Lys	Lys	Val	Ile
197		290					295					300				
200	Asp	Gln	Arg	Tyr	Lys	Asp	Leu	Gly	Pro	Met	Ser	Ile	His	Glu	Ile	Gln
201	305					310					315					320
204	Val	Met	Ile	Leu	Phe	Ile	Phe	Met	Val	Val	Met	Tyr	Phe	Thr	Arg	Lys
205					325					330					335	
208	Pro	Gly	Ile	Phe	Leu	Gly	Trp	Ala	Asp	Leu	Leu	Asn	Ser	Lys	Asp	Ile
209				340					345					350		
212	Arg	Asn	Ser	Met	Pro	Thr	Ile	Phe	Val	Val	Val	Met	Cys	Phe	Met	Leu
213			355					360					365			
216	Pro	Ala	Asn	Tyr	Ala	Phe	Leu	Arg	Tyr	Cys	Thr	Arg	Arg	Gly	Gly	Pro
217		370		_			375	_	-	-		380	_	-	-	
220	Val	Pro	Thr	Gly	Pro	Thr	Pro	Ser	Leu	Ile	Thr	Trp	Lys	Phe	Ile	Gln
	385			-		390					395	•	_			400
224	Thr	Lys	Val	Pro	Trp	Gly	Leu	Val	Phe	Leu	Leu	Glv	Glv	Glv	Phe	Ala
225		-			405	-		•		410		_	_	- 4	415	
228	Leu	Ala	Glu	Glv	Ser	Lvs	Gln	Ser	Glv	Met	Ala	Lvs	Leu	Ile	Glv	Asn
229				420		_			425			-1-		430	1	
	Ala	Leu	Ile	Glv	Leu	Lvs	Val	Leu		Asn	Ser	Val	Leu		Leu	Val
233			435	- 4				440					445			
	Val	Ile		Val	Ala	Val	Phe	Leu	Thr	Ala	Phe	Ser		Asn	Val	Ala
237		450		,			455					460				
240	Ile		Asn	Ile	Ile	Ile		Val	Len	Ala	Glu		Ser	Len	Ala	Tle
	465					470					475					480
		Ile	His	Pro	Leu		Len	Ile	Len	Pro		Glv	Len	Ala	Cvs	
245					485	-1-				490		011			495	002
	Met	Ala	Phe	His		Pro	Val	Ser	Thr		Pro	Asn	Ala	Len		Ala
249				500	200		•	001	505	110	110	11011	1114	510	Vul	712.0
	Glv	Tvr	Ala		Tle	Ara	Thr	Lys		Met	Δla	Tle	Δla		Tle	Glv
253	4 -1	- 1 -	515			9	****	520	1100	1100	1114	110	525	OLY	110	Cry
	Pro	Thr		Tle	Thr	Tle	Tlo	Thr	T.211	Pho	Va 1	Pho		Gln	Thr	Trn
257		530	110	110	1111	110	535	1111	шси	1110	Val	540	Cys	0111	1111	пр
	Glv		Val	Val	ጥህዮ	Dro		Leu	Aen	Sor	Pho		Glu	Trn	Λla	Gln
	545	пси	٧۵١	Val	ıyı	550	ASII	шeu	ASII	261	555	110	Giu	тър	Ата	560
		Tur	Δla	Δla	Δla		Lan	Gly	Aen	Luc		Uic				500
265	110	ı yı	пια	nια	565	лта	шец	СТУ	ASII		1111	1112				
	<21C)> SE	'О ТГ	י אור						570		•				
		l> LE														
		2> TY			. J 4											
					~~+	NI ~ CIT	,									
2/1	\ZI 3	3> OF	CANI	. SM:	rat	NaCl										

RAW SEQUENCE LISTING DATE: 01/12/2005 PATENT APPLICATION: US/10/718,359 TIME: 11:34:06

Input Set : A:\041116.US 275.00080101.ST25.txt

Output Set: N:\CRF4\01122005\J718359.raw

273	<400> SEQUE	ENCE: 3					
274	ccagtctgtc	tccctttcac	gcgatggctt	cggcgaagac	ttatgtgacc	aagttcaagt	60
			gccccgatcc				120
278	acaagtttgc	caggtgtgcc	tatgttataa	tcctcatggc	catctactgg	tgcacagatg	180
			tecetectge				240
			gtccaataca				300
			gtggaacgtt				360
	-		aagccttcac				420
			agcaatactg				480
			gtagccacaa				540
			aaggccagcg				600
			gaggatgaag				660
			agcatcgggg				720
			atgcaggaat				780
			gccctcccaa				840
			atgagaccca	-			900
			aagattgcct				960
			gaatgcaacg				1020
			ggcttcatgc	-			1080
			gacgccacag				1140
	-		aagttcaatt			-	1200
			ctgctgaatt				1260
			ggaggatttg				1320
			cagatggagc				1380
320	ccttgatctt	gtcctgtatt	gttgcaatga	ccacagagtg	cacgagtaac	gtggccacta	1440
			tttgcctcca				1500
324	atgtcatgat	tccctgcacc	ttgagtgcgt	cacttgcctt	catgttgcct	gtggccaccc	1560
326	cacctaacgc	catcgtgttt	gcctacggac	acctcaaagt	tattgacatg	gtaaaaacag	1620
328	gattggtaat	gaacatcctt	ggaattgcat	ctgtgtttct	gtcagtcaac	acctggggac	1680
330	gggctgtgtt	taacttggat	aaattccctg	actgggcaaa	tttgacacat	attaacactt	1740
332	aggagaacca	caagagcaca	ggcttgtccc	ccaacccttt	cgaggactgc	gaaccttctg	1800
334	gcacaccttg	cacagagcac	tggtgctcat	accccagtgt	gacccaatga	tgtcaacacc	1860
336	ccaagaagat	ctaaccaact	agccacctct	tcctccaggc	tcaggttcag	agatggcaac	1920
338	gggcgatggg	aagataggct	cagaagggaa	aggaaccttt	gagaggtcgt	gaggcccatc	1980
340	ttccctagga	cccttccatc	tcacctgggc	aggaaacaga	gggactgggg	ctcaagtcct	2040
342	gtaccacgtg	gctttgaaag	acttctgact	ccatgctggg	ctctggttct	cacatgcctg	2100
344	ttcccacggt	ctccacatgg	ggatcagatg	accaggagac	agcccctgtg	cctcttctgg	2160
346	atgttcccag	atcaccatct	ctatcaccac	gaaggaactt	cctctccagg	acagaactct	2220
348	gatcttgaac	actttccact	gccagagtta	gagtggaaat	cacggccccc	tgaagacttt	2280
350	gactctacat	ggtgccatct	ccaaccactg	ggcaacctga	ggtgctaaca	ttgaggcctt	2340
352	cctgctcacc	cttggctgac	ctgttcccta	cttgccttat	ctcttattag	ttaacagttt	2400
354	gaggcccctt	cccagctccc	cagtgagact	tcatcaactc	ctagatgctc	ctggctgagg	2460
			tgattgttct				2520
358	ctgggtcata	catcagggat	ggacaatggt	gtctctttag	gggatggtgt	taaagtggga	2580
			tggctggatc				2640
			cctgttggac				2700
			aagcctggta				2760
			agaccctgcc				2820
368	ggaacccatg	ggaccactca	catgaaaggg	agacagaaga	ggaagctctc	ccttgtcctt	2880

RAW SEQUENCE LISTING DATE: 01/12/2005
PATENT APPLICATION: US/10/718,359 TIME: 11:34:06

Input Set : A:\041116.US 275.00080101.ST25.txt
Output Set: N:\CRF4\01122005\J718359.raw

370	cage	ggat	gct (ctct	tcct	tg c	ttaat	tttg	c to	tgaaa	aaga	agca	atga	gtg	ggga	gataag	2940
																agtccc	3000
374	cate	caaa	gac (caag	tatg	tg to	ctgg	ctcc	t tg	ggag	ggat	ggc	tcct	gac (cata	ctgtcg	3060
376	aag	gctt	gct (cttg:	tcaaa	at a	ctct	gtct	g cta	atgg	aaag	ttc	cagt	gtg	ctga	ctggtc	3120
																gctctc	3180
380	tgt	ccac	ctc (caaa	aaaa	aa aa	aaaa	aaaa	a aaa	aaaa	aaaa	aaaa	aaaa	aaá a	aaaa	aaaaa	3240
382	aaaa	aaaa	aaa a	aaaa													3254
385	<210	0> S	EQ I	D NO	: 4												
386	5 <211> LENGTH: 572																
387	7 <212> TYPE: PRT																
388	<21	3> 0	RGAN:	ISM:	rat	NaC'	ľ										
390	<400	0> S	EQUE	NCE:	4									,			
392	Met	Ala	Ser	Ala	Lys	Thr	Tyr	Val	Thr	Lys	Phe	Lys	Ser	Phe	Val	Ile	
393	1				5					10					15		
396	Leu	Phe	Phe	Ala	Pro	Ile	Leu	Leu	Leu	Pro	Leu	Ile	Ile	Leu	Val	Pro	
397				20					25					30			
400	Asp	Lys	Phe	Ala	Arg	Cys	Ala	Tyr	Val	Ile	Ile	Leu	Met	Ala	Ile	Tyr	
401			35					40					45				
404	Trp	Cys	Thr	Asp	Val	Ile	Pro	Val	Ala	Ile	Thr	Ser	Leu	Leu	Pro	Val	
405		50					55					60					
408	Leu	Leu	Phe	Pro	Leu	Leu	Lys	Val	Leu	Asp	Ser	Lys	Gln	Val	Cys	Val	
409	65					70					75					80	
412	Gln	Tyr	Met	Thr	Asp	Thr	Asn	Met	Leu	Phe	Leu	Gly	Ser	Leu	Ile	Val	
413	•				85.					90				•	· 95		
416	Ala	Thr	Ala	Val	Glu	Arg	Trp	Glu	Leu	His	Lys	Arg	Ile	Ala	Leu	Arg	
417				100					105					110			
420	Met	Leu	Leu	Phe	Val	Gly	Thr	Lys	Pro	Ser	Arg	Leu	Met	Leu	Gly	Phe	
421			115					120					125				
	Met		Val	Thr	Ala	Phe		Ser	Met	Trp	Ile		Asn	Thr	Ala	Thr	
425		130					135					140					
		Ala	Met	Met	Ile		Ile	Val	Glu	Ala		Leu	Glu	Gln	Met		
	145					150					155					160	
	Ala	Thr	Asn	Val		Val	Asp	Ala	Ser		Arg	Thr	Met	Glu	Leu	Leu	
433	_	_	_	_	165	_		_	_	170	_				175		
	Asp	Lys	Asn	_	Ala	Ser	GLu	Leu		Gly	Ser	Gln	Val		Phe	Glu	
437	_	_	_	180	~ 1	_	~ 3		185				_	190		_	
	Asp	Pro		Val	Gin	Lys	GIn		Asp	GLu	Glu	Thr		Asn	Met	Tyr	
441	-		195	_		~		200	_	- 1		_	205	~ 1		m1	
	ьys		Met	Asn	ьeu	Cys		Cys	Tyr	Ala	Ala		тте	GTĀ	Gly	Thr	
445	70.7	210	.	ml	~ 1	m1	215	_				220	-	~ 1	63	24.1	
		Thr	Leu	Thr	GLY		GTĀ	Pro	Asn	vaı		Leu	Leu	GIŸ	Gln		
	225	C1	T	D1	D	230	a	.	70	77-7	235	7	D1	2.1.	.	240	
	GIN	GIU	ьeu	Pne		Asp	Ser	ràs	Asp		мет	Asn	Pne	Ата	Ser	Trp	
453	Db -	71.7	Dl	71 -	245	D	7	Mat	T ~ · ·	250	Ma-+	T	T7 = 7	Mat	255	Поле	
	rne	ATS	rne		ьeu	Pro	ASN	мет		ьeu	мет	ьeu	vaı		Ala	пр	
457	T	П	T 6	260	C+	Dh -	П	Mc+	265	D	7)	T	т	270	m1	Core	
	ьeu	тrр		ьeu	cys	rne	ıyr		wrg	rro	ASN	ьeu	_	гла	Thr	суз	
461	T1_	C	275	C1	7)	T	T	280	7	መኑ	C1	T	285	71 7 -	0	T	
464	тте	cys	cys	етλ	Arg	ьys	ьys	ьys	Asp	Tnr	GIU	ьуѕ	тте	ΑΙα	Ser	ьys	

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 01/12/2005 PATENT APPLICATION: US/10/718,359 TIME: 11:34:07

Input Set : A:\041116.US 275.00080101.ST25.txt

Output Set: N:\CRF4\01122005\J718359.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seg#:29; Xaa Pos. 1,3,4,6,7,9,10,11,12,13,15,16

Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete, per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:15,16,17,18,19,20,21,22,23,24,25,26,27,28,29

VERIFICATION SUMMARY

DATE: 01/12/2005

PATENT APPLICATION: US/10/718,359

TIME: 11:34:07

Input Set : A:\041116.US 275.00080101.ST25.txt

Output Set: N:\CRF4\01122005\J718359.raw

L:2016 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29 after pos.:0